

Silicon Labs' BG22L and BG24L "Lite" SoCs Bring Application-Optimized Ultra-Low Power Bluetooth® Connectivity

New BG22L delivers robust security and processing for common Bluetooth devices, while BG24L supports advanced AI/ML acceleration and Channel Sounding

AUSTIN, Texas, Jan. 30, 2025 /PRNewswire/ -- Silicon Labs (NASDAQ: SLAB), a leader in secure, intelligent wireless technology for a more connected world, introduced the [BG22L](#) and [BG24L](#) SoCs for [Bluetooth® LE](#) connectivity, with "L" representing the new application-optimized Lite devices.

Optimized for common Bluetooth applications like asset tracking tags and small appliances, the BG22L brings the most competitive combination of security, processing power, and connectivity for high-volume, cost-sensitive, and low-power applications. The BG24L SoC includes the Silicon Labs accelerator for [AI/ML](#) applications and support for [Bluetooth Channel Sounding](#) for asset tracking and geofencing, even in the most crowded areas like packed warehouses and multi-family housing units.

"We know that our customers are always looking for ways to keep pace with the demands of the evolving IoT market while reducing costs," said Ross Sabolcik, senior vice president of the Industrial and Commercial business unit at Silicon Labs. "The BG22L and BG24L expand our portfolio to match those customer needs and concerns by providing an optimized set of industry-leading Bluetooth features with our signature IoT capabilities like high RF sensitivity, low power, robust security, and powerful compute."

BG24L Accelerates Adoption of Bluetooth® 6.0 and Channel Sounding

Channel Sounding was one of the most exciting features when the Bluetooth SIG announced [Bluetooth® 6.0](#) in September 2024. It allows Bluetooth 6.0 devices like the BG24L SoC to use two-way connections to determine the distance between themselves within sub-meter accuracy. This opens a range of applications from item finding to access control. For example, users would be able to locate keys, wallets, or any other Bluetooth 6.0-equipped item at a fraction of the power of other ranging technologies. In commercial and industrial environments, Channel Sounding brings similar item-finding functionality to retail shelves, distribution centers, and more.

Another use case for channel sounding is wireless access control. Bluetooth 6.0-equipped devices will be able to communicate with vehicles, package lockers, and other things that generally require an interaction or passcode. By sensing that a device is in close proximity, the locker or vehicle can open automatically simply by recognizing the signal of the approaching, securely designated Bluetooth device.

With a 78 MHz ARM Cortex M33 processor, 768 kB of Flash, and 96 kB of RAM in a 5 mm x 5 mm QFN40 packaging, the BG24L is a cost-effective SoC for high-volume Bluetooth Channel Sounding. Visit the Silicon Labs YouTube channel to see a [demonstration of the Bluetooth Channel Sounding](#) application using a similar SoC.

For AI and machine learning applications, the BG24L also includes Silicon Labs' proprietary Matrix Vector Processor (MVP) AI/ML accelerator. With the embedded MVP accelerator, the BG24L provides up to 8x faster inferencing performance using only 1/6th of the power compared to performing the same calculations on the Cortex M, thereby extending battery life. This makes BG24L an ideal ML inferencing platform for time-series data on IoT applications such as sensors and predictive maintenance. Using [AI/ML development tools](#) from Silicon Labs and its partners, BG24L is the easiest and most accessible IoT platform for exploring the possibilities of edge AI.

BG22L Offers Up to Ten Years of Battery Life on a Coin Cell Battery

Advancements like Channel Sounding and AI/ML are pushing the boundaries of what's possible with Bluetooth applications. However, there are still opportunities to leverage the core strengths of Bluetooth, with billions of devices using it for simple sensors, asset tracking, beacons, and streamlined Wi-Fi setup for appliances.

The BG22L is competitively designed for these common wireless applications where robust, secure Bluetooth connectivity is needed. BG22L SoCs deliver an exceptional balance of low cost, low power consumption, high reliability, and superior performance. It includes ultra-low power receive mode along with a Precision Low-Frequency RC Oscillator (PLFRCO) that eliminates the need for an external oscillator with no performance loss, which conserves space within the host device while saving on costs and bills of materials for the manufacturer. These enhancements enable BG22L to operate for up to ten years

on a single coin cell battery.

The BG22L also supports Bluetooth 5.4 and Bluetooth Direction Finding. It features an ARM Cortex M33 processor at 38.4 MHz, up to 352 kB of flash, and up to 24 kB of RAM in a 4 mm x 4 mm QFN32 packaging.

Get Started with Silicon Labs Bluetooth SoCs Today

Both the BG22L and the BG24L are planned for general availability in Q2 of 2025. In anticipation of the release, learn more about Silicon Labs Bluetooth solutions below:

- [Register](#) for Silicon Labs 2025 Tech Talks, including an upcoming unboxing of the BG22L and BG24L this March
- Learn more about the new features and enhancements of [Bluetooth 6.0 and Channel Sounding](#)
- See a [demonstration of Bluetooth Channel Sounding](#) using a similar Silicon Labs Bluetooth SoC

SOURCE Silicon Labs

For further information: Sam Ponedal, sam.ponedal@silabs.com

Additional assets available online:  [Images \(2\)](#)  [Video \(1\)](#)

<https://news.silabs.com/2025-01-30-Silicon-Labs-BG22L-and-BG24L-Lite-SoCs-Bring-Application-Optimized-Ultra-Low-Power-Bluetooth-R-Connectivity>